



M3 junction 9 improvements

Preliminary Environmental
Information Report
Non-Technical Summary



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Project Manager:	Mehdi Zegmou
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1. Introduction

1.1.1 This document is the Non-Technical Summary of the Preliminary Environmental Information Report which forms part of the Development Consent Order (a type of planning permission) pre-application consultation material for the M3 Junction 9 Improvements (the Proposed Scheme).

1.2 What is the purpose of the Preliminary Environmental Information Report?

1.2.1 The Preliminary Environmental Information Report provides an initial statement of the main environmental information available for the study area, along with descriptions of likely environmental effects and mitigation measures envisaged for the Proposed Scheme. Where possible, the Preliminary Environmental Information Report provides a preliminary assessment of possible environmental effects. We've based these assessments on preliminary results from emerging surveys at this stage, and used informed professional judgements, where required. We've produced the Preliminary Environmental Information Report and this Non-Technical Summary to explain the key issues to allow you to prepare responses to our consultation.

1.2.2 Please note that at this stage the information is preliminary. An iterative process of scheme development and Environmental Impact Assessment (EIA) is ongoing. The final findings of the EIA will be informed by feedback from this pre-design public consultation and reported within the Environmental Statement prepared for the Proposed Scheme. The Environmental Statement will accompany a Development Consent Order (DCO) application submitted to the Secretary of State through the Planning Inspectorate.

1.3 Previous consultation and engagement

1.3.1 The previous stage of design for the Proposed Scheme included looking at options, referred to herein as the 'options selection stage'. During this stage, we held an options consultation during January and February 2018, where we put forward a proposal for consideration along with details of 3 rejected options. A Preferred Route Announcement was made in July 2018. Since then the design has been further developed. The majority of those who responded to the previous consultation agreed with the need for improvements around Junction 9 of the M3 and believed that the option presented at that stage would meet the scheme objectives. The Proposed Scheme is currently in preliminary design stage.

1.3.2 You raised a number of key issues and concerns about the Proposed Scheme in feedback to the previous consultation. Further information outlining how we have sought to address these issues and concerns through our design and assessment work can be found in the Consultation Brochure accompanying the pre-design public consultation.

1.4 Background to the Proposed Scheme

1.4.1 M3 Junction 9 is a key transport interchange. It connects south Hampshire (which has an intensive freight generating industry) and the wider sub-region, with London via the M3 and the Midlands/North via the A34 (which also links to the principal east-west A303 corridor).

- 1.4.2 A significant volume of traffic currently uses the grade separated, partially signalised junction (approximately 6,000 vehicles per hour during the peak periods), which acts as a bottleneck on the local highway network and causes significant delays throughout the day. Northbound and southbound movements between the M3 and the A34 are particularly intensive, with downstream queues on the northbound off-slip of the M3 often resulting in safety concerns during peak periods.
- 1.4.3 To address this, the Proposed Scheme would increase capacity, improve journey time reliability and support development in line with development plans. The Proposed Scheme would include the replacement of a circulatory roundabout with a dumbbell roundabout, conversion of the M3 south of Junction 9 to a dual 4 all-lane running motorway, realignment of slip roads, the addition of new structures and improvements to safety features, signage and technology. Part 2 of the Preliminary Environmental Information Report further describes the Proposed Scheme.
- 1.4.4 The Proposed Scheme is classed as a Nationally Significant Infrastructure Project under the Planning Act 2008 and, as such, requires a DCO to proceed. Highways England intends to submit an application for a DCO to construct the Proposed Scheme to the Secretary of State through the Planning Inspectorate. Before we submit the DCO application, we will carry out consultation, an assessment of the impacts on the environment and refinement of the preliminary engineering design of the Proposed Scheme.

1.5 What are the objectives of the Proposed Scheme?

- 1.5.1 The Proposed Scheme has 5 strategic objectives:
- Supporting economic growth – it will support the creation of more jobs, more businesses and new homes.
 - A safe and serviceable network – safety will improve because there will be less queueing and fewer delays.
 - A more free-flowing network – there will be less congestion and better journey time reliability.
 - An improved environment – we will improve, where possible, the number of households adversely affected by noise, improve the air quality at sensitive locations and aim for no net loss in biodiversity.
 - A more accessible and integrated network – improvements at Junction 9 would also include improvements for walkers, cyclists and horse riders. The Proposed Scheme would connect the National Cycle Network Route 23 which is severed by the current junction layout.
- 1.5.2 The Proposed Scheme aims to achieve these objectives by introducing free-flow movement between the M3 and A34 at Junction 9. This would reduce congestion and improve journey time reliability on the M3, A34 and local road network.

1.6 Description of the Proposed Scheme

1.6.1 The existing M3 Junction 9 is a grade separated, partially signalised roundabout, connecting multiple nationally and locally significant routes. The M3 here is joined with the A34 towards Newbury and Oxford, the A272 towards Petersfield and southern Winchester, and Easton Lane towards Winnall and northern Winchester.

1.6.2 The A33 from Basingstoke connects with the A34 just north of the roundabout, and the A31 from Alton connects to the A272 just south of it.

1.6.3 The improvements proposed below aim to maintain this existing connectivity, while increasing capacity, simplifying routing and improving facilities for walkers, cyclists and horse-riders:

- Traffic between the M3 to and from Southampton and the A33/A34 to and from Basingstoke and Newbury would be taken out of the roundabout junction by providing free-flow grade separated links.
- Widening of the M3 from a 2-lane motorway with a hard shoulder, to a 4-lane motorway (with hardstrips) between the south-facing roundabout slips and the new free-flow links.
- There will be a new smaller, grade separated, dumbbell roundabout arrangement within the footprint of the existing roundabout, incorporating a new bridge connection over the M3 with walking, cycling and horse-riding facilities.
- There will be new walking, cycling and horse-riding subways through the junction, providing a continuous grade separated route between the South Downs National Park, Winnall and Abbots Worthy.
- There will be connector roads from the new free-flow links to the new dumbbell roundabout.
- There will be improved slip roads to and from the M3.

1.6.4 The Proposed Scheme would include land needed for gantries, signage, a satellite construction compound area, areas for environmental mitigation and areas for drainage requirements. It is important to note that the current proposed draft Development Consent Order Limits could be subject to change as the design progresses and becomes more detailed, but they currently capture the extent of the land we will need, based on the present design.

1.7 What are the key environmental constraints?

1.7.1 The Proposed Scheme is surrounded by a primarily urban area to the west of the M3 and a primarily rural area to the east. The Proposed Scheme would need to take land from the South Downs National Park, which extends to the north, east, south and some areas to the west of the Proposed Scheme.

1.7.2 The River Itchen and associated floodplain lies within the northern part of the Proposed Scheme and 2 groundwater Source Protection Zones lie within the northern extent of the Proposed Scheme.

- 1.7.3 The River Itchen is designated as a Special Area of Conservation and a Site of Special Scientific Interest. St Catherine's Hill Site of Special Scientific Interest is located approximately 400 metres south of the Proposed Scheme.
- 1.7.4 There are a number of scheduled monuments and listed buildings near the Proposed Scheme along with a record of known archaeological assets in the area.
- 1.7.5 Further designations such as Noise Important Areas and Air Quality Management Areas (that do not sit within the Proposed Scheme but are close by) are shown on the Environmental Constraints Plan (Figure 1-2) at the end of this Non-Technical Summary.

1.8 What is Environmental Impact Assessment (EIA)?

- 1.8.1 EIA is the process for identifying the likely environmental effects (beneficial and adverse) of proposed developments and predicting their significance, before development consent is granted. The aim of the EIA is to ensure that the following are carried out:
- an assessment of likely effects of a proposed development on the environment
 - consideration of mitigation measures and alternatives in light of potential environmental effects
 - an assessment of the cumulative effects of a proposed development
- 1.8.2 Through this process, the development should include measures to prevent, reduce or offset the significant, adverse environmental effects of the proposals and enhance the beneficial effects.
- 1.8.3 We will carry out the EIA in line with the EIA Regulations¹ and guidance contained in the *Design Manual for Roads and Bridges*, known as the DMRB. Some environmental topics will follow additional best practice guidance, such as the survey methodology from the Chartered Institute of Ecology and Environmental Management.
- 1.8.4 We submitted a Scoping Report to the Planning Inspectorate on 28 January 2019. Following a period of consultation with stakeholders, a Scoping Opinion was received on 8 March 2019. A copy of the Scoping Opinion can be found at the following link:
- <https://infrastructure.planninginspectorate.gov.uk/document/TR010055-000078>
- 1.8.5 We have considered the Scoping Opinion, where possible, during the preliminary assessments used to inform the preliminary environmental information. The Scoping Report, Scoping Opinion and this preliminary assessment form the basis for us to carry out further EIA work, which will be presented in the Environmental Statement to accompany the DCO application. We will submit a formal response to the points raised in the Scoping Opinion alongside the Environmental Statement.
- 1.8.6 The following chapters set out the preliminary environmental information for the following environmental topics:

¹ The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

- Air quality
- Cultural heritage
- Landscape and visual
- Biodiversity
- Geology and soils
- Material assets and waste
- Noise and vibration
- Population and health
- Road drainage and the water environment
- Climate
- Cumulative effects

1.8.7 We will carry out an assessment for major accidents and disasters (referred to as major events) identified for the Proposed Scheme which we will report in the relevant individual environmental topics in the Environmental Statement.

2. Air Quality

2.1 What is the existing environment like?

2.1.1 The Proposed Scheme falls within the local authority area of Winchester City Council. The council has 1 Air Quality Management Area where the annual nitrogen dioxide (NO₂) objective is exceeded, but the Proposed Scheme is not located within the Air Quality Management Area.

2.1.2 Local authority air quality monitoring shows that pollutants are not too high (no exceedances) at monitoring stations within 2 kilometres of the Proposed Scheme, apart from at the Martyr Worthy Road, Kings Worthy diffusion tube station.

2.1.3 According to the Department for Environment, Food and Rural Affairs' background map concentration data and the relevant Pollution Climate Mapping links that intersect the Proposed Scheme, levels of NO₂ and fine particulate matter (PM₁₀ and PM_{2.5}) are below the air quality strategy objectives. Monitoring surveys that we have carried out specifically for the Proposed Scheme have shown that there are not any breaches of the air quality strategy objective for NO₂.

2.2 What are the potential impacts on air quality, and how can these impacts be reduced?

2.2.1 The preliminary assessment in the Preliminary Environmental Information Report has used the work carried out at the option selection stage because the traffic data for the preliminary design stage assessment is not available yet. The preliminary design stage

assessment will include detailed air quality modelling, once we have received the traffic data.

- 2.2.2 Potential impacts from the construction phase relate to changes in traffic emissions on the road network and the potential for nuisance dust as a result of the construction works. In the option selection stage assessment, we concluded that there would be no significant impacts on amenity, human health or designated ecological receptors, providing appropriate mitigation measures were in place. We expect appropriate industry standard mitigation measures to be set out in a Code of Construction Practice as the project progresses.
- 2.2.3 Potential impacts from the operational phase would result from changes in emissions of oxides of nitrogen (NO_x), NO₂, PM₁₀ and PM_{2.5} along the M3 and wider road network because of changes in traffic flows and speeds. We expect the Junction 9 improvements to reduce congestion and make traffic speeds more consistent, despite an overall increase in traffic along the M3. Less congestion and more consistent traffic speeds could partially offset the expected increase in emissions that more traffic would cause. The assessment carried out at the option selection stage concluded that no significant adverse impacts on human health would be likely, and so no mitigation was needed at that earlier stage. Significant impacts would occur at certain locations of the designated ecological areas, but we expect impacts on nitrogen deposition to be less than 1% of the lower critical level for the most sensitive features, and so no mitigation was suggested.

3. Cultural Heritage

3.1 What is the existing environment like?

3.1.1 We have identified a total of 254 cultural heritage assets within the 300-metre study area, including:

- 120 archaeological remains (including Scheduled Monuments)
- 121 historic buildings (including Conservation Areas and Grade 1, Grade II and Grade II* Listed Buildings)
- 13 historic landscape types

3.1.2 Archaeological evaluation, monitoring and recording conducted in March and April 2019 confirmed the presence of in situ archaeological remains, some of which are associated with a known Prehistoric occupation site that extends into the area of the Proposed Scheme. There could also be further unknown archaeological remains situated within the boundary of the Proposed Scheme.

3.2 What are the potential impacts on cultural heritage, and how can these impacts be reduced?

3.2.1 A large portion of the area that could be affected by the Proposed Scheme has already been subject to historical archaeological investigations and mitigation. The potential for in situ archaeological remains is therefore likely to be limited to within the field to the east of the current M3, the thin strip of land between the M3 and the A34, and the location of the construction compound to the north-west.

- 3.2.2 Construction activities could have significant effects on known and unknown archaeological remains in these areas. We expect that a programme of strip, map and sample excavation will be conducted in response to the findings of the invasive survey conducted in March and April 2019. There is also the potential for a programme of archaeological watching brief during construction.
- 3.2.3 Historic buildings and the historic landscape are unlikely to be significantly affected due to the nature of the Proposed Scheme. The Proposed Scheme is largely on the same line or immediately next to the current roads, and the overall setting would not be greatly modified. Maintaining and incorporating appropriate mitigation through design in the form of screening (for example using cuttings, bunds and vegetation) would further reduce any potential effects on the setting of historic landscapes and historic buildings.

4. Landscape and Visual

4.1 What is the existing environment like?

- 4.1.1 The Proposed Scheme area comprises a complex landscape pattern which is dominated by the M3 and A34 roads, the existing grade separated M3 Junction 9 roundabout and slip roads, and other associated features including bridges, cuttings and signage. Established, mixed, native tree and shrub planting of mainly broadleaf species provides an element of screening and landscape integration to the existing road infrastructure.
- 4.1.2 The wider landscape includes the urban area of Winchester to the west of the M3 near Junction 9. Further to the north, residential areas include Headbourne Worthy, Kings Worthy and Abbots Worthy. To the east and south of the M3 is a highly valued landscape of rolling chalk downland, comprising large arable and pastoral fields interspersed with small woodlands and copses, hedgerow field boundaries and a small number of isolated farm holdings or rural dwellings. This landscape forms part of the South Downs National Park, which is a statutory landscape designation of national importance, and also includes a stretch of the River Itchen and associated floodplain crossing the northern part of the Proposed Scheme, extending towards Winchester city centre.

4.2 What are the potential impacts on landscape and visual, and how can these impacts be reduced?

- 4.2.1 The preliminary assessment of the Proposed Scheme shows that there would likely be temporary significant adverse effects on the landscape and people's views because of the construction of the Proposed Scheme. Construction features (compounds, haul roads, traffic management areas) and associated activity, and the loss of vegetation, would be likely to have an adverse impact on the local landscape character of the area and its tranquillity, as well as people's views, including those of local residents, users of Public Rights of Way and long-distance paths. Any lighting used during construction would also be likely to adversely affect night skies, particularly away from the urban areas. Mitigation measures to reduce effects during construction would include removing as little vegetation as possible, avoiding the location of temporary construction features in elevated locations and adopting considerate site management techniques.
- 4.2.2 During operation of the Proposed Scheme, the introduction of new highway infrastructure and traffic and the removal of existing landscape elements would be likely to lead to significant effects on local landscape character and the composition of local views. Some characteristics of the South Downs National Park, such as its vegetation and topography,

would be adversely affected. Light from lighting columns and changes to the visibility of headlights due to loss of vegetation would also likely result in local adverse effects on night skies. To mitigate such effects, we would design earthworks, where possible, to help integrate the Proposed Scheme into the surrounding landscape. We are developing a comprehensive landscape scheme as part of an iterative design process, with input from the project engineers and the environmental disciplines as well as from consultation with relevant stakeholders.

5. Biodiversity

5.1 What is the existing environment like?

- 5.1.1 There is 1 European designated site within 2 kilometres of the Proposed Scheme, namely the River Itchen Special Area of Conservation, part of which passes under the existing A34 and M3 and lies within the Proposed Scheme area (albeit below the carriageway). The River Itchen is also a designated Site of Special Scientific Interest. St Catherine's Hill Site of Special Scientific Interest is located approximately 400 metres to the south of the Proposed Scheme.
- 5.1.2 There are 7 Sites of Importance for Nature Conservation, one of which is also a Road Verge of Ecological Importance, within a 2-kilometre radius of the Proposed Scheme.
- 5.1.3 We have identified several protected species within the Proposed Scheme area, including badgers, bats, dormouse and reptiles.

5.2 What are the potential impacts on biodiversity, and how can these impacts be reduced?

- 5.2.1 The Proposed Scheme could have temporary and permanent effects on habitats and species. Many effects already exist due to the presence of the existing M3 and A34, including disturbance, fragmentation and pollution risks. These effects could be made worse by the Proposed Scheme, or there could be new effects due to habitat loss and temporary site clearance during construction.
- 5.2.2 Best practice construction measures and mitigation measures could be used to reduce the potential for adverse effects on biodiversity, and the landscape and habitat design could incorporate a number of enhancements for biodiversity. Enhancements would include creating areas of new habitat, including woodlands, trees, hedgerows, chalk grassland and pond habitats, as well as adding bat roosting boxes, bird nesting boxes, dormouse boxes and habitat piles to achieve a net gain for biodiversity.

6. Geology and Soils

6.1 What is the existing environment like?

- 6.1.1 The bedrock of the area is mainly Seaford Chalk Formation with alluvium; sand and gravel; clay with flints; and clay, silt, sand and gravel alluvial and superficial deposits. We expect there to be several areas of made (artificial) ground next to the Proposed Scheme area.
- 6.1.2 There are historic landfills in the south of the Proposed Scheme area and 2 further historic landfills within 250 metres of the Proposed Scheme boundary. Potential contaminated

land uses in the area include the use of the motorway, agricultural land, landfills, historic and current industrial land uses and the historic railway line.

6.2 What are the potential impacts on geology and soils, and how can these impacts be reduced?

- 6.2.1 There are a number of sensitive receptors that could be affected by the Proposed Scheme during the construction and operational phases. These include mineral sites, agricultural soils, groundwater in aquifers and Source Protection Zones, surface waters, environmentally sensitive sites, built environment receptors and construction workers.
- 6.2.2 We have developed a preliminary conceptual site model to inform the Preliminary Environmental Information Report. This model outlines the potential sources of contamination, such as historic landfills and potential made ground, potential pathways, such as through inhalation of dust or leaching of contaminants to aquifer, and the potential receptors, such as the health of the construction workers, groundwater and surface water.
- 6.2.3 We are currently carrying out a ground investigation and we will present further information and findings in the Environmental Statement. The conceptual site model will be updated with the ground investigation data for the Environmental Statement.

7. Material Assets and Waste

7.1 What is the existing environment like?

- 7.1.1 Data on the general availability of construction materials in the South East of England and across the UK show significant availability of materials for the construction of the Proposed Scheme. Landfill capacity in the South East has fallen since 1999, but capacity has stabilised and we expect this level of capacity to remain available through the construction period up to the first year of operation of the Proposed Scheme.
- 7.1.2 There are areas designated as mineral safeguarding areas for sharp sand and gravel and a safeguarded mineral processing site in the northern part of the Proposed Scheme.

7.2 What are the potential impacts on materials assets and waste, and how can these impacts be reduced?

- 7.2.1 The Proposed Scheme would use material resources (including those recovered from site arisings) and produce and manage waste during the construction of the Proposed Scheme and its supporting infrastructure.
- 7.2.2 The direct impact of using primary materials (new materials rather than recycled) is the consumption of non-renewable environmental resources. Associated indirect impacts include the release of greenhouse gas emissions, water consumption and scarcity, environmental degradation and pollution, and nuisance to communities (visual, noise, dust).
- 7.2.3 The generation and management of waste directly affects the capacity of waste management facilities within the region. Disposal to landfill has a range of indirect impacts, including the release of greenhouse gas emissions, environmental pollution and nuisance to communities (visual, noise, dust).

- 7.2.4 At this stage, we are not able, until the engineering aspects have been identified, to identify precisely the environmental impacts and effects associated with the use and consumption of materials or the generation and management of waste during construction.
- 7.2.5 Due to the inherent nature of road schemes, the Proposed Scheme would need to use materials and generate waste arisings during construction. We would proactively manage any adverse effects on the use of natural resources and the capacity of off-site waste disposal facilities to reduce such effects.
- 7.2.6 Once constructed, we do not think that the Proposed Scheme would use large quantities of material resources or generate a lot of waste during operation and maintenance.

8. Noise and Vibration

8.1 What is the existing environment like?

- 8.1.1 The existing noise climate varies across the study area. Much of the study area would be dominated by road traffic noise, particularly the areas close to the M3, A34 and A33. However, the study area includes relatively large areas where there are no major roads and these areas would be exposed to lower noise levels.
- 8.1.2 In addition to road traffic noise, there would be localised noise from commercial areas clustered around the west side of Junction 9, as well as some limited noise associated with aircraft arriving at and departing from Southampton Airport.
- 8.1.3 There are 3 Noise Important Areas (areas identified as being particularly susceptible to traffic noise) within the noise model calculation area.
- 8.1.4 There are a number of sensitive receptors near the Proposed Scheme, including residential areas, schools, environmentally sensitive areas, places of worship and Public Rights of Way.

8.2 What are the potential impacts on noise and vibration, and how can these impacts be reduced?

- 8.2.1 The preliminary assessment in the Preliminary Environmental Information Report used the work carried out at the option selection stage because the traffic data for the preliminary design stage assessment is not available yet. We will check the assessment conclusions below using updated traffic data and associated noise modelling and report the final findings in the Environmental Statement.
- 8.2.2 Certain construction activities and operations would be more likely than others to cause potentially significant levels of noise and vibration (for example, piling or large-scale earthworks). Given the nature of the area in which the M3 Junction 9 is situated and the construction of the various highway links that would form the junction, at least 1 substantial structure would be constructed, along with varying lengths of retaining walls.
- 8.2.3 Few, if any, dwellings would be close to the centre of the construction activity. However, as the Proposed Scheme lies within or close to the South Downs National Park, the River Itchen Site of Special Scientific Interest and Special Area of Conservation and a number of long-distance footpaths, some temporary adverse effects would be expected for any users within these designated areas, should they find themselves close to the works. Many of

those affected would be transient users and so would be exposed to noise/vibration over a short period only.

- 8.2.4 The closeness of certain sensitive receptors to M3 Junction 9, combined with the scale and complexity of the works and associated construction traffic and traffic management, means that there could be disruption during construction. Disruption would be more likely where there is night-time working.
- 8.2.5 Although construction-related impacts would be temporary, they could still be enough to need mitigation. We will develop a mitigation strategy during the EIA to reduce any residual noise and vibration impacts during construction, and these would be set out in a Code of Construction Practice.
- 8.2.6 The noise modelling work carried out for the option selection stage included a total of 2,027 residential dwellings in the noise model calculation area. Non-residential, but potentially noise-sensitive, receptors were also considered. The model predicted that, when the Proposed Scheme opens, the vast majority of dwellings and other sensitive receptors would experience a negligible amount of change in noise levels. For the long-term assessment, the model predicted that noise impacts would be no greater than negligible in size for any dwelling or other sensitive receptor considered.
- 8.2.7 For the River Itchen Site of Special Scientific Interest and Special Area of Conservation and the South Downs National Park, the model predicted that most of the areas they encompass would have negligible changes in noise levels, with a small number of areas predicted to experience minor or moderate adverse impacts.
- 8.2.8 Where necessary, noise mitigation measures, in the form of low noise road surfacing and noise barriers, would be incorporated into the Proposed Scheme design to reduce predicted potential noise impacts.

9. Population and Health

9.1 What is the existing environment like?

- 9.1.1 The preliminary baseline assessment of population and human health considered the following issues to be relevant to the Proposed Scheme:
- A local resident population with higher than average rates of respiratory issues, meaning the population could be more susceptible to the effects of air pollution.
 - Residents within the Winnall neighbourhood are relatively deprived compared to neighbouring communities, with potentially fewer means to cope with changes in the area and a higher likelihood to experience poorer health outcomes.
 - Poor provision for potential active travel journeys (walking and cycling), particularly between The Worthys and Winnall industrial estate, suppressing the number of local journeys that can be done by sustainable and active modes.
 - Poor access between Winchester and the South Downs National Park east of the M3 corridor due to inconvenient crossing points with low amenity, which could discourage residents from accessing the countryside and participating in outdoor recreation.

9.2 What are the potential impacts on population and health, and how can these impacts be reduced?

- 9.2.1 During construction, there would likely be some short-term, temporary disruption to access along routes that you use for walking and cycling for either active travel or recreational purposes. However, we expect operation of the Proposed Scheme to improve connectivity and your opportunities to walk and cycle for either active travel or recreational purposes and therefore contribute to health benefits and improve amenity in the local community. In particular, the quality of route along National Cycle Network Route 23 and access into the South Downs National Park would be improved and therefore encourage more use.
- 9.2.2 The Proposed Scheme would therefore be likely to have beneficial effects in relation to the key baseline issues identified above.
- 9.2.3 We expect there to be some disruption to traffic flows during construction. These would be likely to increase driver stress for people using the M3 Junction 9 and the surrounding local highway network on a temporary basis. Once constructed, improved design standards and reduced congestion would likely reduce driver stress.

10. Road Drainage and the Water Environment

10.1 What is the existing environment like?

- 10.1.1 The study area for the Proposed Scheme crosses the River Itchen and one of the River Itchen's tributaries, the Nun's Walk Stream. There are also many ditches, ponds, wetlands and ordinary watercourses associated with the River Itchen floodplain. The surface water bodies within the study area support several services, including biodiversity, recreation, abstraction and several discharges.
- 10.1.2 The Proposed Scheme lies within a groundwater vulnerability classification zone of 'High', these areas are typically vulnerable and easily able to transmit pollution to groundwater. There are a number of groundwater users in the area, including public supply wells, licensed abstractions and private unlicensed abstractions. These could be particularly vulnerable to any disruptions of groundwater flow, provision and quality.
- 10.1.3 The northern and western parts of the study area, particularly the A34 Winchester Bypass and M3 north of Long Walk, extend into an area designated as Flood Zone 3 – an area with a 1% (1 in 100 year) Annual Exceedance Probability risk or greater of flooding associated with the River Itchen and its tributaries. The study area is mainly within an area at very low risk from surface water flooding and has variable susceptibility to groundwater flooding.

10.2 What are the potential impacts on road drainage and the water environment, and how can these impacts be reduced?

- 10.2.1 The Proposed Scheme includes 3 deep cuttings, an underpass and subway which could intersect groundwater. Road drainage would be discharged largely to ground and surface water. Mitigation options would include designing these features in a way that follows best practice and benefits the surrounding environment where possible.
- 10.2.2 Highway design standards have been developed to protect the water environment from highway pollution and to prevent increases in flood risk. There are also established

construction practice guidelines to manage pollution risk during construction. We will carry out further investigations and assessments to inform the EIA process and design. Based on the current information, we expect the Proposed Scheme to be designed to avoid any increase in flood risk, avoid an adverse change in the quality of water being discharged, reduce any impact to water-dependent nature conservation sites and reduce the risk from pollution incidents.

11. Climate

11.1.1 Climate is a consideration in any development proposal involving significant changes in greenhouse gas emissions. The Proposed Scheme would cause changes to greenhouse gases emitted due to the change in vehicle traffic emissions and the construction activities for the Proposed Scheme. Climate is also a consideration in any development proposal because of the effects that climate change can have on a development.

11.2 What is the existing environment like?

11.2.1 The assessment of the effects on climate quantifies emissions of greenhouse gases from the Proposed Scheme to the atmosphere. Sources of emissions include construction carbon, associated with project activities, and transport and road user carbon, including emissions associated with maintenance and refurbishment needs.

11.2.2 The conditions of the existing environment are based on the quantity of emissions that are generated. There are currently no emissions estimates available, but emissions from any single road scheme are unlikely to result in a significant impact to climate in relation to overall national emissions.

11.2.3 The assessment of the vulnerability of the Proposed Scheme to climate change will consider future climate projections and the Proposed Scheme receptors which could be vulnerable to climate changes.

11.2.4 The UK's most recent climate projections indicate that, during the lifespan of the Proposed Scheme, the seasonal average temperatures could increase by up to 3.4°C during the winter and 5.6°C during the summer. Expected future rainfalls show marked seasonal differences, with up to 36% less rain anticipated during summer, and up to 24% more rain during the winter.

11.3 What are the potential impacts on climate, and how can these impacts be reduced?

11.3.1 The preliminary assessment in the Preliminary Environmental Information Report used the work carried out at the option selection stage because there were no construction and air quality updates. This is because the designs are in progress and the traffic data for the preliminary design stage assessment is not available yet.

11.3.2 All aspects of the Proposed Scheme that directly or indirectly result in emissions of greenhouse gases have the potential to result in climate effects. These include:

- Construction of the Proposed Scheme, including delivery of carriageway materials, import of earth fill, and onsite earth movement, delivery and installation of drainage, barriers, signs and lighting, delivery of materials for new roundabout and bridges, installation of major structure and activities for organisations carrying out construction works.
- Operation of the Proposed Scheme, including vehicles using the network.
- Maintenance, repair and refurbishment of the Proposed Scheme, including resurfacing.

11.3.3 While the Proposed Scheme would result in increased greenhouse gas emissions, these would not be considered significant in the context of the UK's carbon budget commitments. It is very unlikely that the impact of a road project will, in isolation, affect the ability of the government to meet its carbon reduction plan targets.

11.3.4 Mitigation measures to reduce the effects of the Proposed Scheme on climate change include reducing the use of resources and use of renewable resources, reducing import and export of materials and using more efficient construction plant and machinery.

11.3.5 Elements of the Proposed Scheme are considered vulnerable to future changes in climate, including road surfacing and structures. Current best practices will inform the design of the Proposed Scheme, which will reduce risks to vulnerable elements of the Proposed Scheme as well as drivers using the junction.

12. Cumulative Effects

12.1.1 The following types of effect are part of the cumulative effects assessment reported in the Preliminary Environmental Information Report:

- Intra-project effects, also referred to as interrelationships between topics. These occur where a single receptor (for example, a residential dwelling) is affected by more than one source of effect arising from different aspects of the Proposed Scheme.
- Inter-project effects, also referred to as cumulative effects. These effects occur as a result of a number of past, present or reasonably foreseeable proposed developments, which individually might not be significant, but when considered together could create a significant cumulative effect on a shared receptor.

12.2 What is the existing environment like?

12.2.1 Seventy other developments were identified for inclusion in the long list of developments during the option selection stage assessment. They comprise 6 agricultural schemes; 13 commercial and industrial schemes; 4 power generation schemes; 7 allocated sites; 8 infrastructure schemes, including a pipeline project and a road scheme; and residential developments. Five developments from the long list were carried forward for further assessment, referred to as the short list. We will continue to review the long list and short list of proposed developments during the EIA process as further applications for development consent or planning permission are made or withdrawn.

12.3 What are the impacts on cumulative effects, and how can these impacts be reduced?

- 12.3.1 The most sensitive receptors in the surrounding area of the Proposed Scheme that could potentially experience impact interactions are residential and community receptors as well as Public Rights of Way users, the immediate area of South Downs National Park, ecological receptors and groundwater and surface water courses.
- 12.3.2 Where other major improvement and construction projects are delivered at the same time as, and near, the Proposed Scheme, there could be cumulative adverse impacts. Conversely, we will also consider opportunities to work with other major projects where this could be beneficial. We expect there to be positive socio-economic effects for the local region when the Proposed Scheme and other identified developments are in operation.

13. Summary of potential effects and proposed mitigation measures

	Potential effect	Proposed mitigation
Air Quality	Changes to levels of air quality emissions pollution, including dust during construction.	We will implement measures to control, reduce and monitor potential effects from construction dust and emissions. We will look to reduce adverse effects on air quality near the Proposed Scheme. We would analyse air quality effects and implement measures to mitigate potentially significant effects in the surrounding environment.
Cultural Heritage	Effects on the setting of historic features and potential impacts on buried archaeology.	The design avoids effects on cultural heritage assets where possible. Where needed, we will provide mitigation for sensitive receptors which could include, where appropriate, screening in the form of cuttings, bunds and vegetation as well as considerate construction practices. We will also implement a programme of strip, map and sample excavations before construction.
Landscape and Visual	Land take from the South Downs National Park. Changes to the tranquillity of the South Downs National Park and changes to views.	The design looks to integrate the Proposed Scheme into the surrounding topography, creating specific landscape forms, retaining vegetation wherever possible and creating and planting new habitats. These designs are in discussions with the land owners as well as stakeholder organisations. Considerate site management will be employed during construction.
Biodiversity	Loss of habitat for protected species, and designated areas for nature conservation.	The design has sought to avoid or reduce the effect on these areas where possible. The potential mitigation for impacts on biodiversity include replacement habitat and enhancements to existing habitats, as well as considerate construction practices.

	Potential effect	Proposed mitigation
Geology and Soils	Potential for encountering existing land contamination, or pollution from construction activities.	Industry standard environmental controls will be put in place during construction to reduce the risk of contamination. Further ground investigations will inform the design and mitigation measures needed.
Material Assets and Waste	Potential for consumption of non-renewable environmental resources and potential impacts on capacity of waste management facilities.	We will look to re-use non-contaminated site arisings generated during demolition, site preparation and construction on site. We will prepare a Site Waste Management Plan before construction starts.
Noise and Vibration	Changes to levels of noise during construction and operation.	We will look to introduce low noise surfacing on new sections of road and the Proposed Scheme will provide noise attenuation (such as barriers) where assessments indicate these are necessary.
Population and Health	Temporary amenity effects and alterations to footpaths and bridleways. Beneficial effects for active travel and connectivity once operational.	Alternative routes and diversions for pedestrians and cyclists would be provided during the construction phase, including appropriate signage to inform and protect pedestrians and cyclists.
Road Drainage and the Water Environment	Changes to water quality and water flows including surface water and groundwater.	Industry standard environmental controls will be put in place during construction to reduce the risk of pollution reaching waterbodies. The highway design standards have been developed to protect the water environment from highway pollution. Further investigations and assessments will inform the design and mitigation measures.
Climate	Potential increase in greenhouse gas emissions from construction and operation. Potential vulnerability of the Proposed Scheme to climate change.	We will look to re-use non-contaminated materials on site to reduce the import and export of materials, as well as use modern construction plant and machinery. The Proposed Scheme would be designed with a view to maximising the operational lifespan of surfaces and structures to reduce the need for maintenance and refurbishment. The Proposed Scheme will ensure resilience to predicted peak rainfalls and increases in peak summer temperatures.

14. What are the next steps?

14.1 Pre-design public consultation

14.1.1 Highways England would like to obtain the views of the public on the draft proposals for the Proposed Scheme design, taking into account the potential environmental effects of

the Proposed Scheme. We will then consider those views in finalising the design and refining the EIA and Environmental Statement.

- 14.1.2 Consultation at this stage follows the previous options consultation held on the Proposed Scheme in January and February 2018. This previous consultation presented information about the Proposed Scheme objectives and the preferred option (Option 14), as well as the rationale for excluding other options. The forthcoming pre-design public consultation in summer 2019 will present more detailed proposals for the Proposed Scheme that are being developed.
- 14.1.3 The pre-design public consultation will run for an 8-week period, from 2 July to 27 August 2019. During this period, 6 public consultation events will be held near the Proposed Scheme. Further details about the events can be found within the Statement of Community Consultation. In the first week of the consultation, 4 targeted briefings will be held for key stakeholder audiences, including statutory environmental bodies and local authorities.
- 14.1.4 Information related to the Proposed Scheme, including the preliminary environmental information set out in the Preliminary Environmental Information Report and this Non-Technical Summary, will be available to access on the consultation web page.
- 14.1.5 Members of the public will be able to respond to the consultation using the online questionnaire, by email, or via a dedicated freepost address, enclosing a completed consultation questionnaire or letter. Respondents will have the opportunity to comment on all aspects of the Proposed Scheme, including the environmental information.
- 14.1.6 Further details of the pre-design public consultation, including events, response channels and deposit locations will be set out in the Statement of Community Consultation, to be published in advance of the consultation.

14.2 After the pre-design public consultation

- 14.2.1 After the consultation period, all responses will be analysed and considered in finalising the Proposed Scheme design and completing the EIA to be reported in the Environmental Statement. To comply with the government's Consultation Principles 2018², results of the public consultation will be published in a Consultation Report within 12 weeks of the end of the public consultation process. The Consultation Report will detail the consultation process and responses received and how they have been taken into account, including any changes to the Proposed Scheme.
- 14.2.2 Highways England must submit an application for development consent to the Secretary of State for authorisation to construct the Proposed Scheme. The Environmental Statement will be submitted with the DCO application. Once the DCO application has been submitted and accepted, the public will have further opportunity to comment on the application.

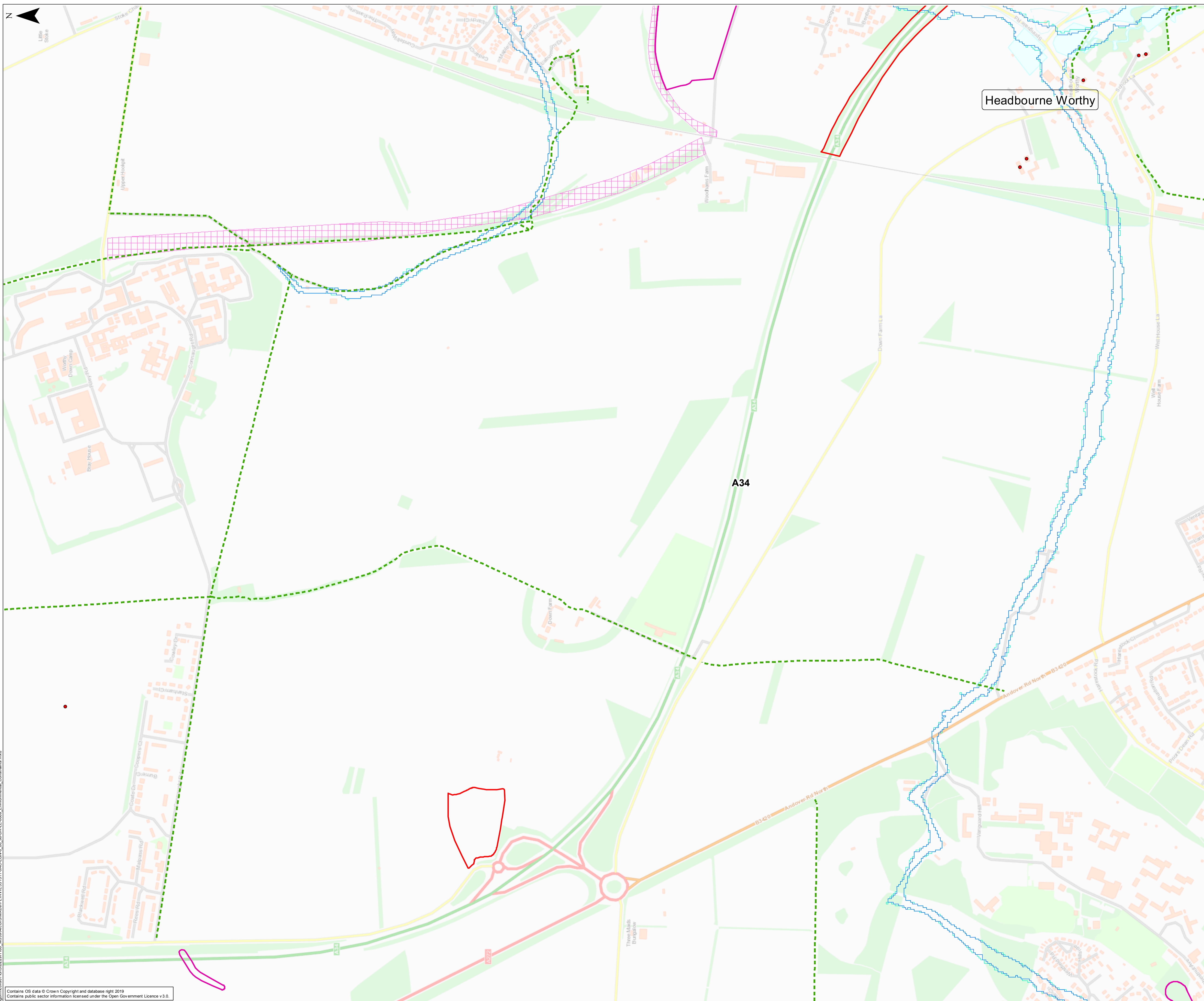
² Government Consultation Principles (2018). [Online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691383/Consultation_Principles_1.pdf [Accessed June 2019]

14.2.3 Details of how the DCO process works can be found on the Planning Inspectorate's National Infrastructure Planning website:

<https://infrastructure.planninginspectorate.gov.uk/application-process/>

14.2.4 Highways England's information leaflet on development consent will be among the information available online during the consultation period. You can view all the consultation materials on our webpage at:

<https://highwayseotland.citizenspace.com/he/m3-junction-9-improvements-statutory-consultation>.

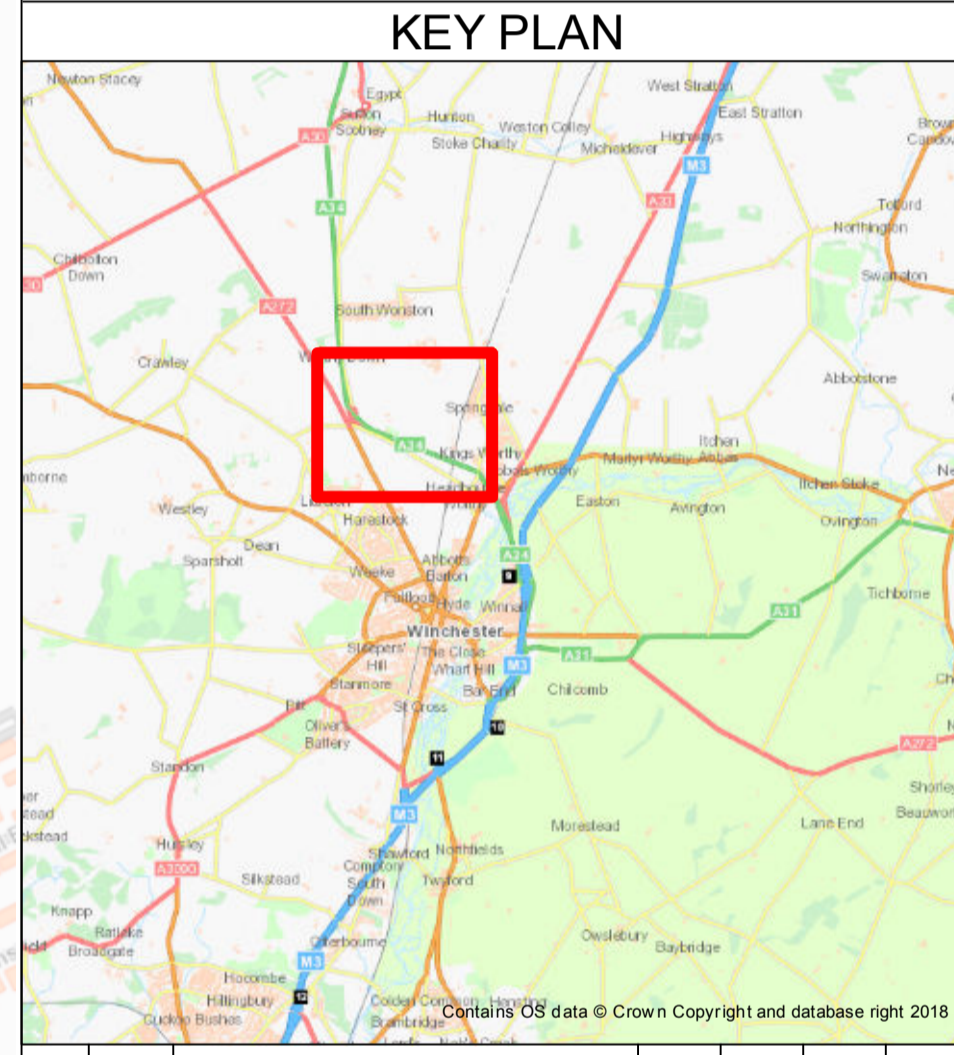


NOTES

LEGEND

- Proposed Order Limits
- Listed Building
- Public Right of Way
- National Trail
- National Cycle Network Route 23
- Scheduled Monument
- Special Areas of Conservation
- EA Flood Zone 3 (1 in 100 or greater AEP)
- EA Flood Zone 2 (1 in 100 - 1 in 1000 AEP)
- Air Quality Management Area (2018)
- Noise Important Area
- Historic Landfill
- Site of Special Scientific Interest
- Registered Parks and Gardens
- South Downs National Park

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SCALE 1:5000



P01	28/03/19	Initial Issue	ZRM	LW	AB	MZ
P02	14/06/19	Approved and Accepted	LW	LD	LD	MZ
Rev.	Date	Description of revision	Drawn	Checked	Reviewed	Approved

DRAWING STATUS
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M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE
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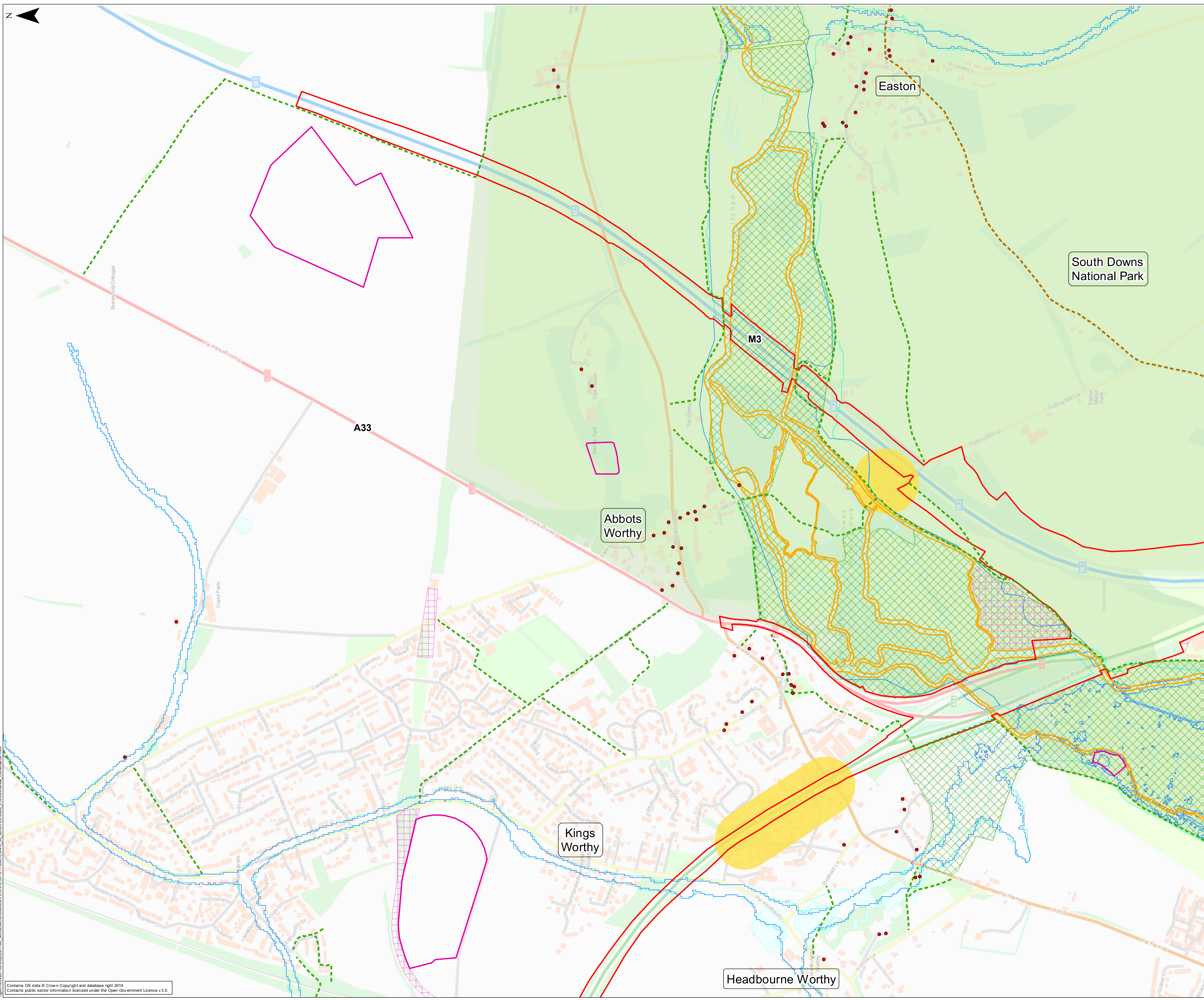
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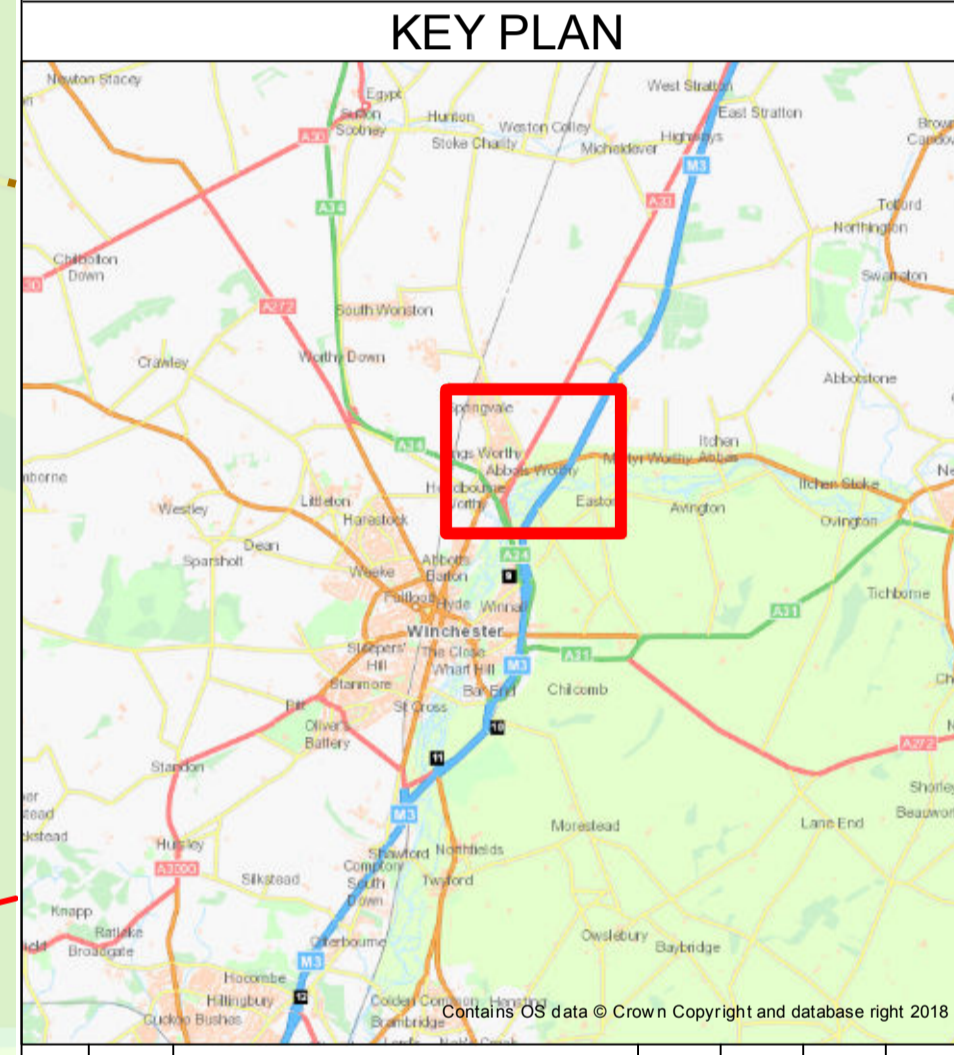


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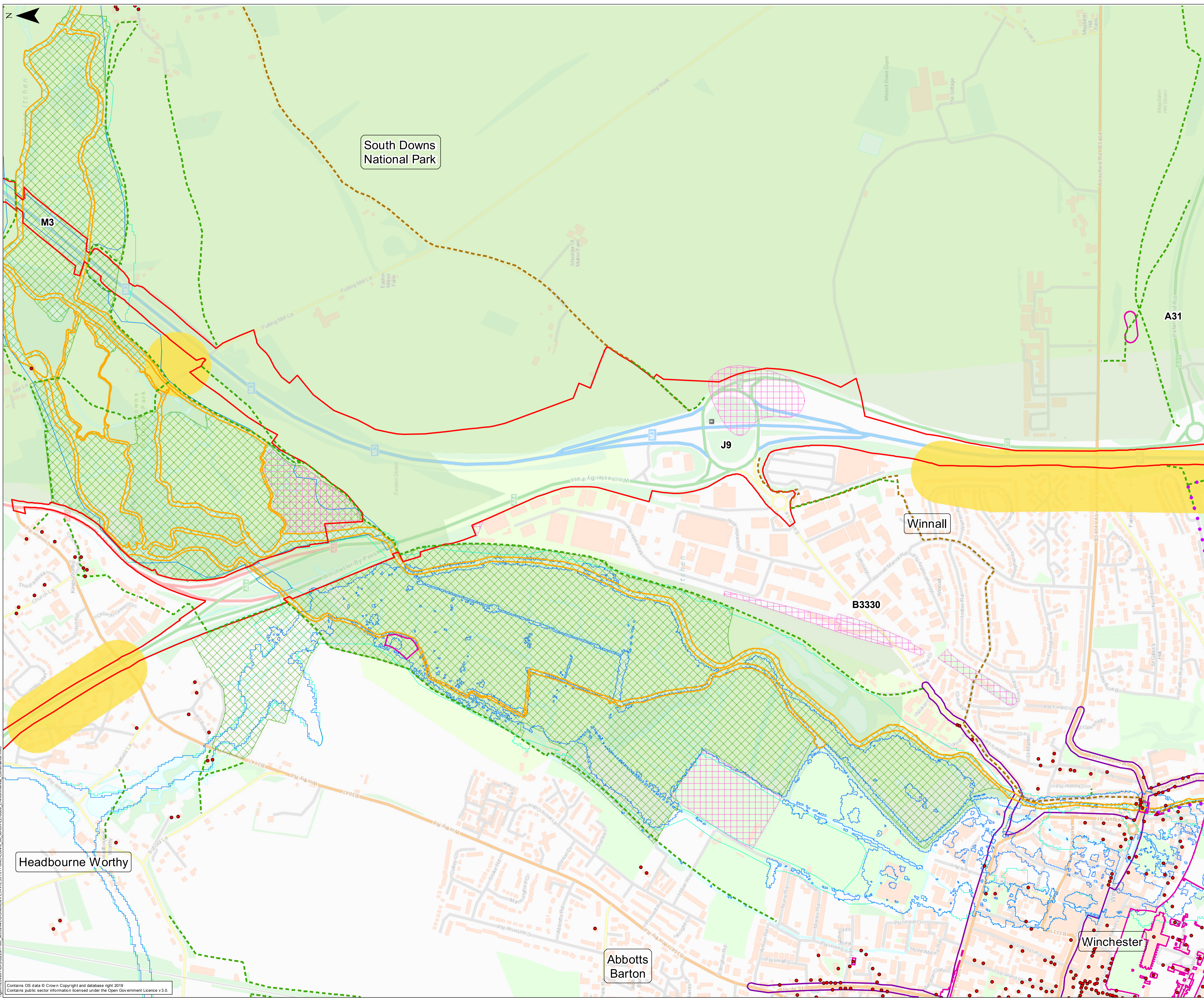
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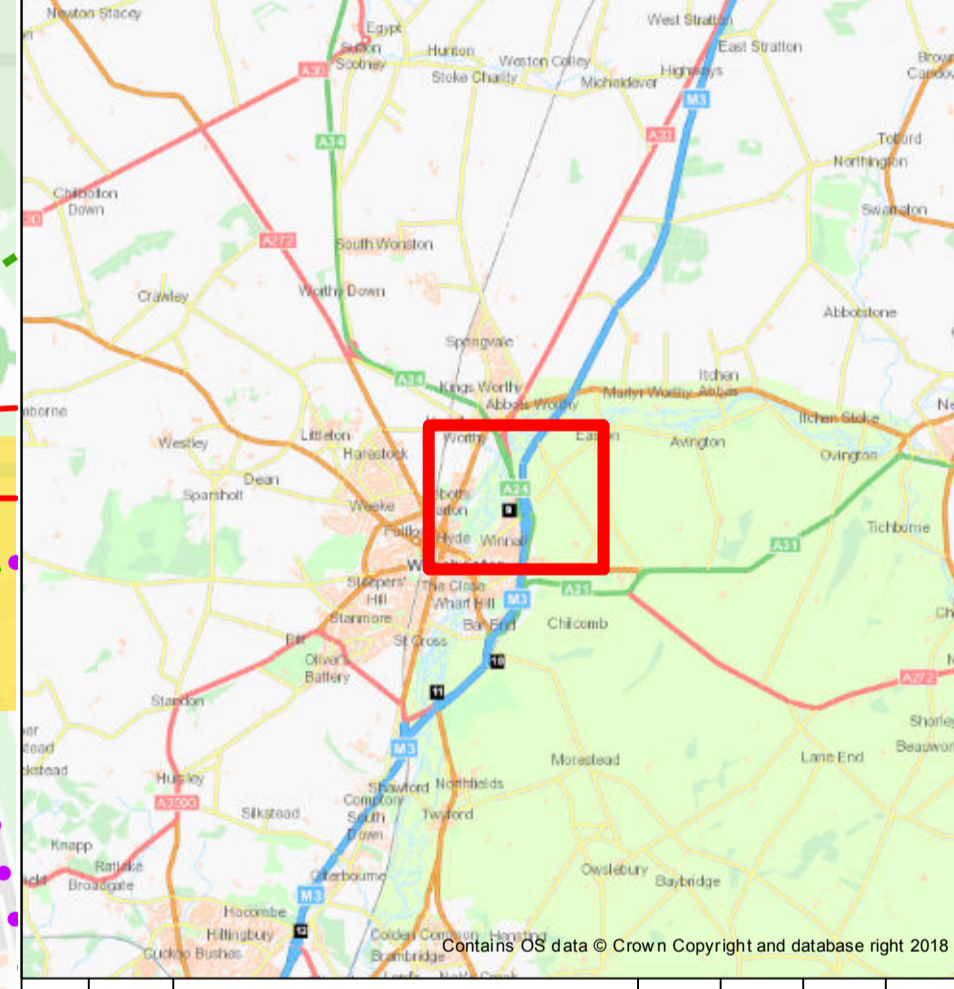
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KEY PLAN



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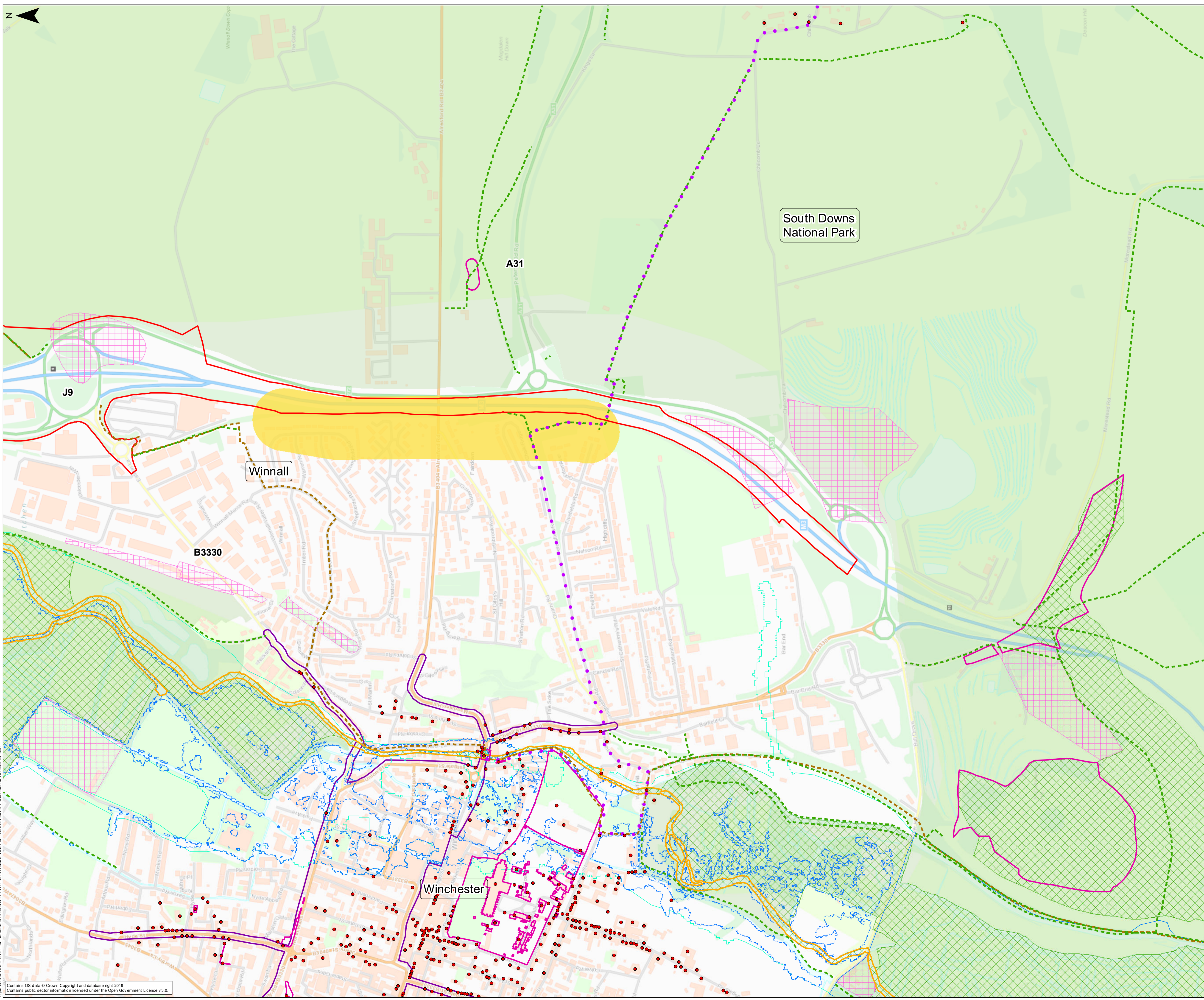
**FIGURE 1-2
ENVIRONMENTAL CONSTRAINTS
(SHEET 3 OF 4)**

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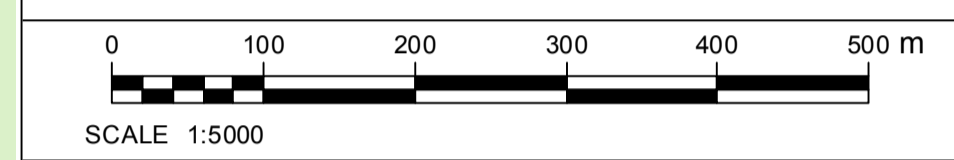
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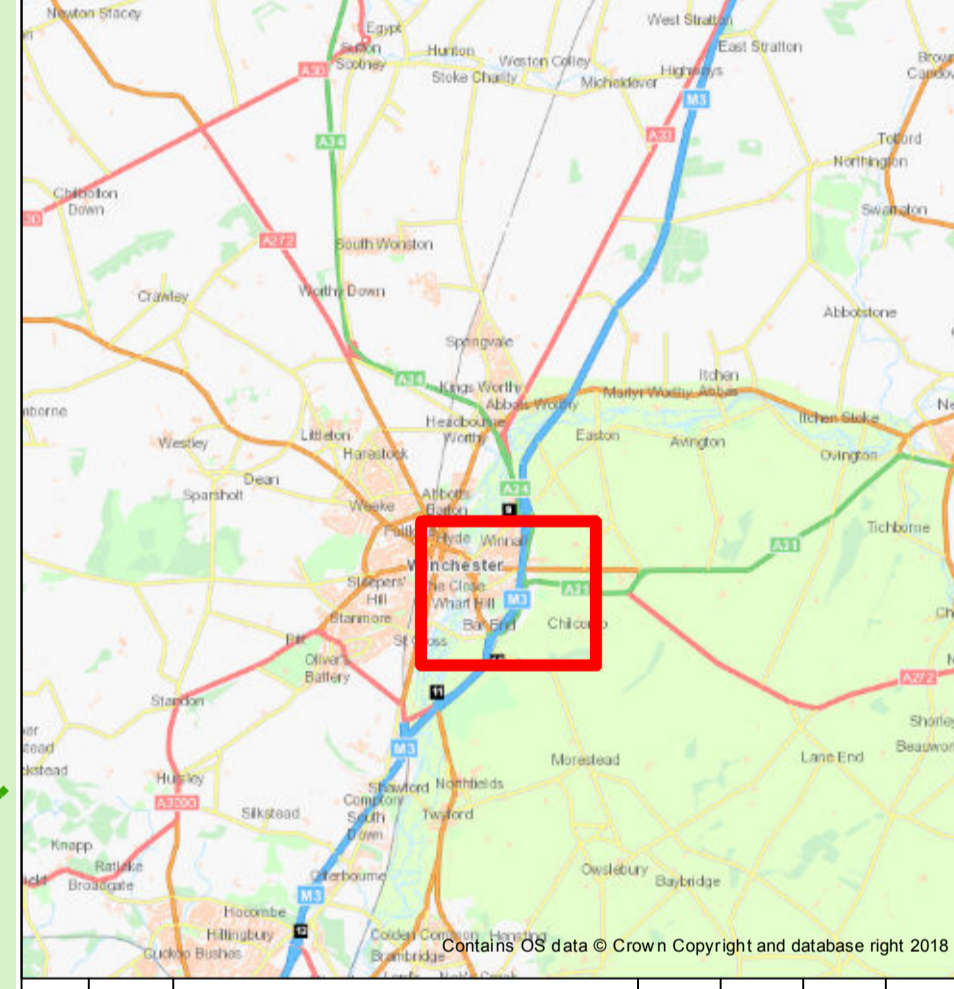
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**FIGURE 1-2
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